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TITLE: CERAMICS-COATED STEEL SHEET
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ABSTRACT:

PURPOSE: To obtain a ceramics-coated steel sheet excellent in corrosion resistance, damage resistance, and contamination resistance by successively forming a sacrificial corrosion layer, a thermoplastic synthetic resin sealing layer, a ceramics thermally sprayed layer, and a thermosetting synthetic resin water-repelling layer on the surface of a steel sheet.

CONSTITUTION: A steel sheet is used as a substrate 10, and the surface of the substrate 10 is plated or thermally sprayed with a metal having sacrificial corrosive action to steel, such as Zn and Al, or a mixture of the above metal and ceramics, by which a corrosion protective layer 11 is formed. The surface of the above corrosion protective layer 11 is coated with thermoplastic synthetic resin, such as PE, or thermally sprayed with a mixture of thermoplastic synthetic resin and ceramics, by which a resin sealing layer 12 is formed. Further, ceramics, such as Al₂O₃, is plasma-sprayed on the above resin sealing layer 12, by which a ceramics thermally sprayed layer 13 is formed. Subsequently, spray coating with thermosetting synthetic resin, such as silane coat, is applied to the surface of the above ceramics thermally sprayed layer 13 and then this resin is hardened by baking at about 200 °C, by which a resin water- repelling layer 14 is formed. By this method, the ceramics-coated steel sheet excellent in corrosion resistance, damage resistance, and contamination resistance and suitable for building material, such as panel for external wall material, can be obtained.

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